



Diabetes Self-Management Education and Support



Module 2
Monitoring



Know Your Diabetes ABCs

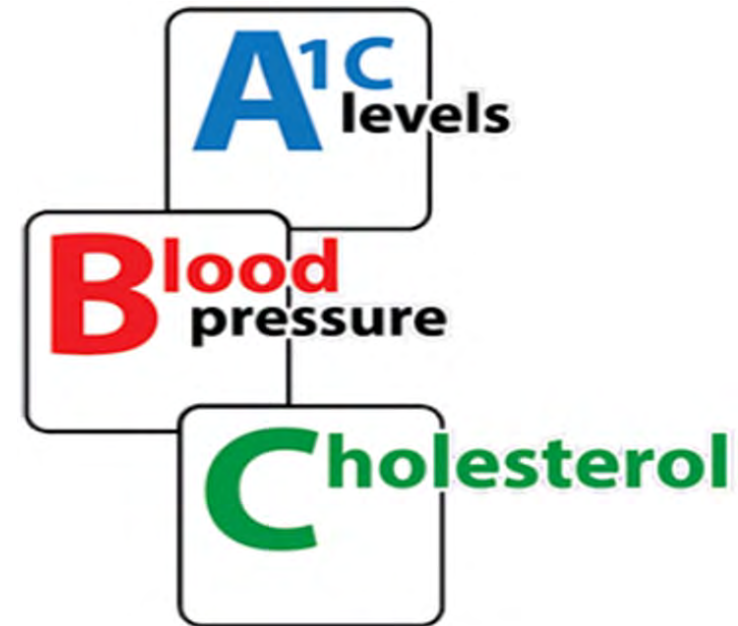
Adults with diabetes are more likely to suffer from heart disease, stroke, and amputations than those without diabetes. By managing your ABCs (A1c, blood pressure and cholesterol) you reduce your risk for diabetes complications including kidney disease, blindness, limb amputation, and hypoglycemia (low blood glucose).

A1c: an average of your blood glucose over a 3-month period. An A1c lower than 8.5% significantly decreases risk for complications. This is discussed more in detail in **Module 7 – Reducing Risks**. Talk to your provider or healthcare team about your A1c target or goal.

Blood Pressure (BP): the pressure exerted by the blood on the walls of the blood vessels and arteries. Talk to your provider or healthcare team about your blood pressure target or goal. To lower blood pressure:

- Decrease salt in your diet and limit or avoid alcohol. We will discuss more in **Module 5 – Healthy Eating**.
- Stop smoking.
- Maintain a reasonable weight.
- Manage stress. This will be reviewed in **Module 3 – Healthy Coping**.
- Take medications as prescribed. We will discuss more in **Module 4 – Taking Medications**.
- Stay physically active. We will cover this topic in **Module 6 – Being Active**.

Cholesterol (Lipids): a waxy substance needed to build cells, make vitamins and other hormones; however, too much cholesterol can be a problem. Talk to your provider or healthcare team about your lipid targets or goals.



My Targets:

A1c: _____

Blood Pressure: _____

LDL or “Lousy” Cholesterol: _____

HDL or “Healthy” Cholesterol: _____

Triglycerides: _____

In This Module You Will:

- Explain why A1c, blood pressure (BP) and lipids are important to monitor for cardiovascular health.
- Understand that personal targets should be set with your provider or healthcare team.
- Identify the clinical tests that are used to monitor kidney health.
- Recognize other clinical tests or exams that are important to monitor or track.
- Understand that monitoring is key to self-managing diabetes.



Testing Your Blood Glucose

Your blood glucose monitor is a useful tool to help you manage your diabetes. It gives you a measure of the glucose in your body at a specific time.

What Can I Learn About My Blood Glucose?

You might notice a pattern. If you look at all your results, you might find that your blood glucose is higher before dinner or lowest after you eat breakfast. If a pattern is discovered, you and your provider or healthcare team can discuss treatment solutions.

How Do I Monitor My Blood Glucose?

You will be taught how to use a blood glucose monitor. Each monitor also comes with a detailed instruction book.

Follow the steps in the **Glucose Monitoring Tips** on the next page.

If you are having any problems with your monitor or need more help, refer to the manual or call the toll-free number located on the back of the monitor.

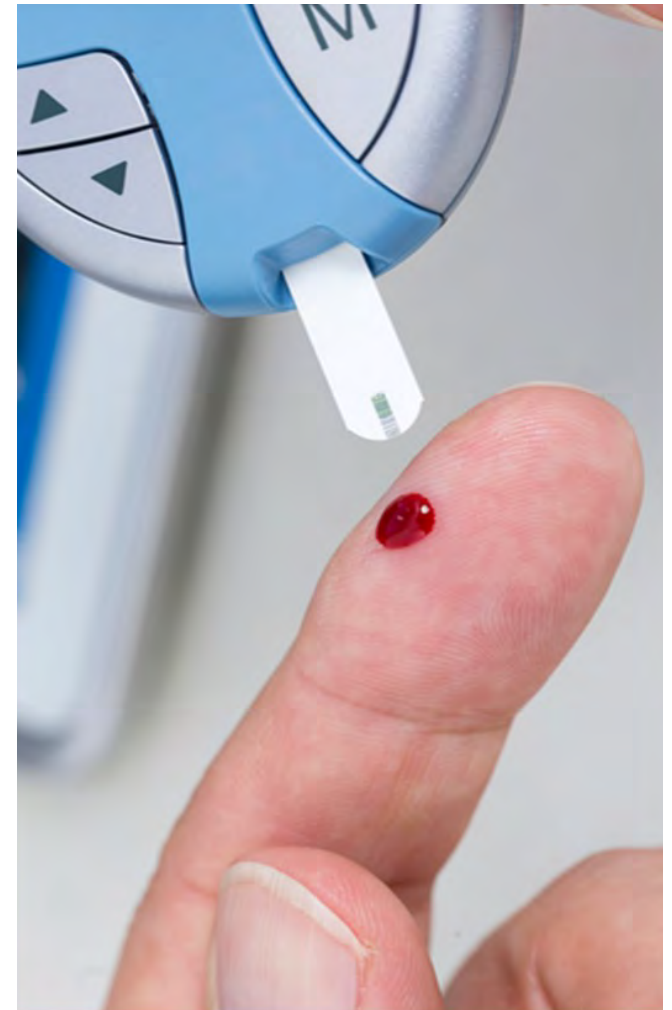
What Should My Blood Glucose Be?

Discuss with your provider or healthcare team what your blood glucose range should be.



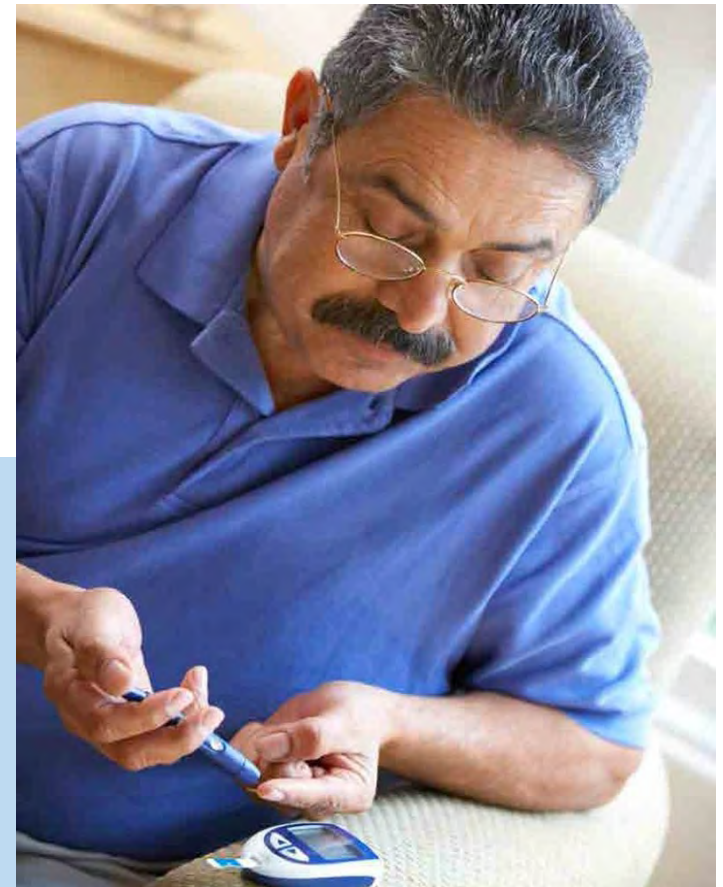
Glucose Monitoring Tips

- Wash your hands with warm soapy water (alcohol wipe is not recommended) to clean the surface and to promote blood flow.
- To reduce pain, prick the sides of the tips of your fingers. **Avoid the center pads.**
- Rotate test sites between all fingers.
- Teach family members how to check your glucose if you are unable to do so.
- Keep a logbook of your blood glucose readings and bring it to each provider visit OR bring your glucose meter with you to your appointments. Your provider or healthcare team may be able to download the information directly from your device.
- For meter problems, refer to the manual or call the telephone number on the back of the meter.
- Be familiar with error codes (found in manual).
- Batteries can be easily replaced.
- Make sure you are not using expired test strips.
- You may be asked to check your blood glucose before and/or after meals, activity or taking medications.
- You may need to check more often if you are sick or having high blood glucose (200 or higher) without reason.



General Glucose Targets

A1c Goal	Less than 7%	7-8%	8-8.5%
Fasting	80-130	90-150	100-180
After Meal	Less than 180	N/A	N/A
Bedtime	90-150	100-180	110-200



My blood glucose target is: _____ to _____

I will check my blood glucose _____ times each day.

I will check my blood glucose at _____ a.m./p.m.

To remember to check my blood glucose, I will:

Using Your Blood Glucose Monitor

Your blood glucose monitor can help you make sense of symptoms you may be feeling. It can also be used to help guide future choices.

FOLLOW THE DIRECTIONS GIVEN BY YOUR PROVIDER OR HEALTHCARE TEAM on how often you should check your blood glucose. You might be advised to:

- Check your blood glucose twice a week.
- Begin checking more often like daily or multiple times each day.
- Whenever you feel different. The result can let you know if your glucose is too high or too low.
- Check to find out how your body reacts to different foods by checking 1-2 hours after eating. Foods affect blood glucose differently in each person. We will discuss this more in **Module 5 – Healthy Eating**.
- Check before, during and after a new activity or exercise. Some diabetes medications can cause low blood glucose with exercise. If a pattern is seen, a change in medication may be needed. You will learn more about diabetes medications in **Module 4 – Taking Medications**.
- Check set times of the day to make sure your medication is working.



Insulin and Blood Glucose Monitoring

- Check fasting blood glucose and at bedtime. Discuss with provider.
- Check later in the day, before a meal and 2 hours after the same meal (paired testing).
- If you are on meal time insulin, check before each meal so you know how much insulin to take.

What is a Continuous Glucose Monitor (CGM)?

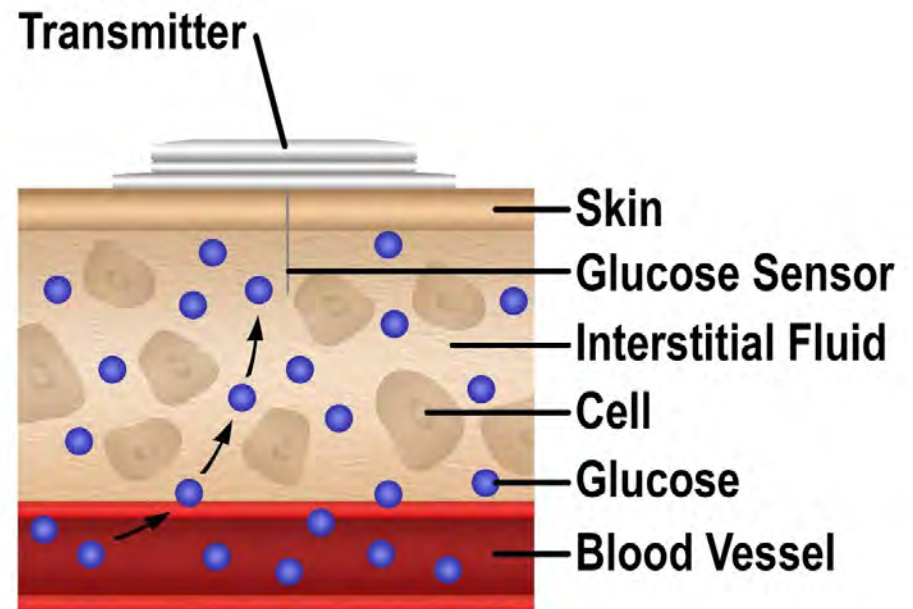
A CGM is another useful tool to measure glucose. It is a small self-inserted sensor worn on the abdomen or the back of the arm.

The CGM measures and records interstitial glucose every 5 to 15 minutes. A CGM provides additional information beyond a current glucose value.

Interstitial fluid surrounds the cells in the tissue below the skin. Glucose moves from the blood (or blood vessels) into the interstitial fluid.

Some CGMs can pair with insulin pumps.

Criteria for Use is different between VA and DOD. Talk to your provider or healthcare team to learn more about CGMs and to see if you qualify.



Comparison of A1c and Estimated Average Glucose (eAG) Levels

A1c	eAG
6	126
6.5	140
7	154
7.5	169
8	183
8.5	197
9	212
9.5	226
10	240
10.5	255
11	269

A1c	What your A1c tells your provider
5.7-6.4	You have prediabetes and would benefit from going to classes to prevent diabetes.
6.5-7.0	You may have diabetes, check with your provider. If you do, it is within standard target ranges!
7.1-8.5	Still at low risk for complications. Likely glucose is within standard target ranges.
8.6-9.0	Your doctor may think this is ok if you have several other health concerns or conditions.
9.1 or higher	Recommend extra help (classes, Dietitians, Behavioral Health, Pharmacists) to help you better manage your diabetes.



My Current A1c: _____

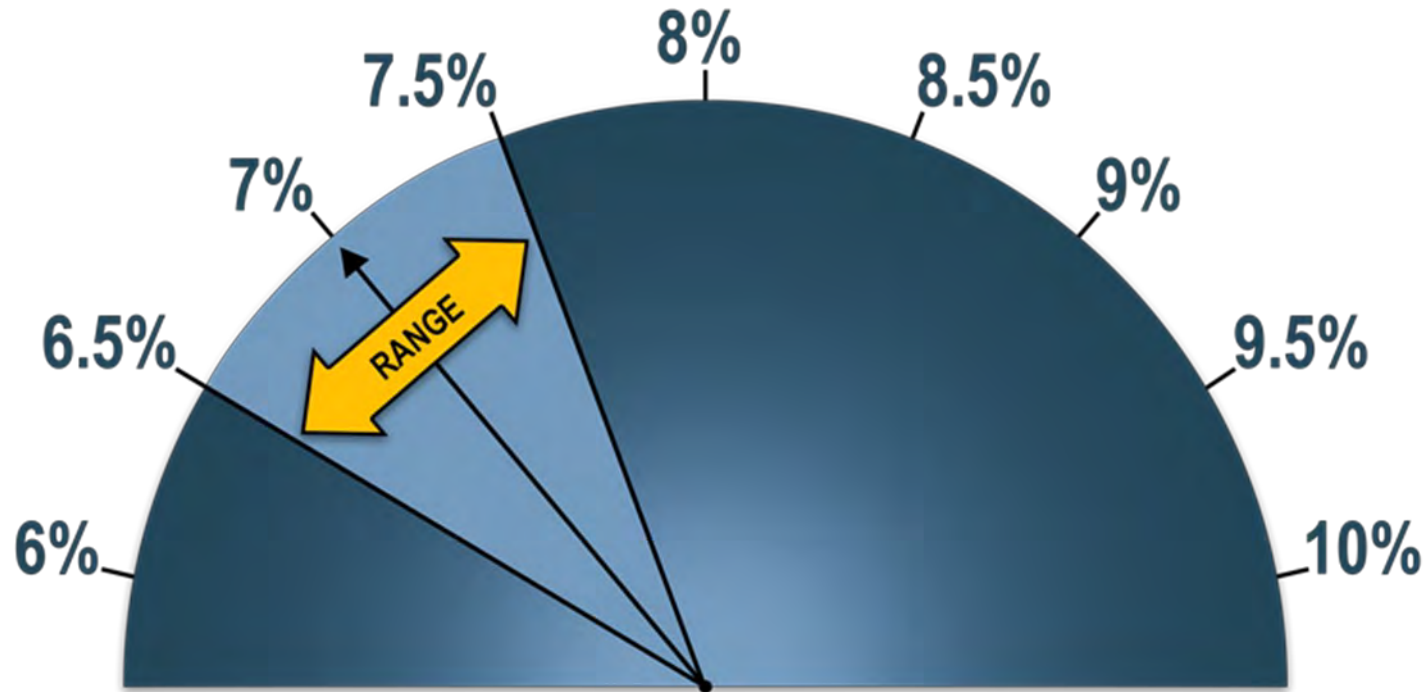
My Current eAG: _____

A1c Target

Did you know...

- Your A1c is used to monitor blood glucose over the past 3 months?
- A1c is a tool and should be used together with blood glucose monitoring?
- Your A1c reflects a range?
- Many factors may cause your A1c to vary like anemia (low iron), recent blood transfusions, dehydration, and sickle cell?

Talk to your provider or healthcare team to make sure that you both agree on your target A1c to help avoid problems with dangerous low blood glucose



Blood Pressure (BP)

Your heart supplies your organs and tissues with blood. With every heartbeat, it pumps blood into the large blood vessels of the circulatory system. As the blood moves around the body, it puts pressure on the walls of the vessels.

Blood pressure is made up of two values:

- **Systolic blood pressure** – the pressure when the heart beats
- **Diastolic blood pressure** – the pressure on the blood vessels when the heart muscle relaxes

Blood pressure varies throughout the day. To get reliable readings, blood pressure is measured more than once and while sitting down. Physical exertion, stress, pain, and extreme temperature (hot or cold) can cause blood pressure to fluctuate. This type of change in blood pressure is temporary and soon returns to normal (**below 120/80**).

Blood pressure that is high (**above 130/80**) during several measurements is called hypertension. High blood pressure increases your risk for cardiovascular problems like heart attacks, strokes, and heart and kidney failure. We will discuss more in **Module 7 – Reducing Risks**.

Managing your blood pressure is important! Here are some tips to help you:

- Eat healthy – limit sodium to 2300 mg or less per day or 700 mg per meal
- Be active
- Quit smoking
- Get enough sleep
- Decrease stress
- Take medications as prescribed

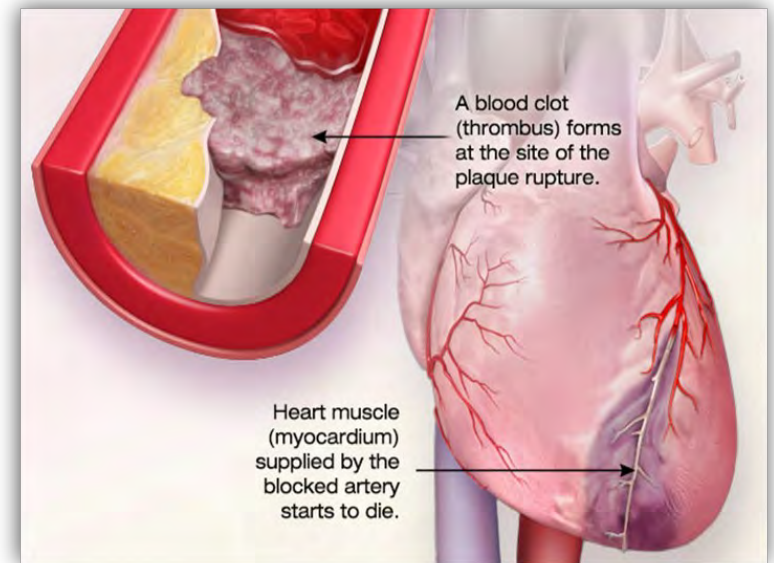
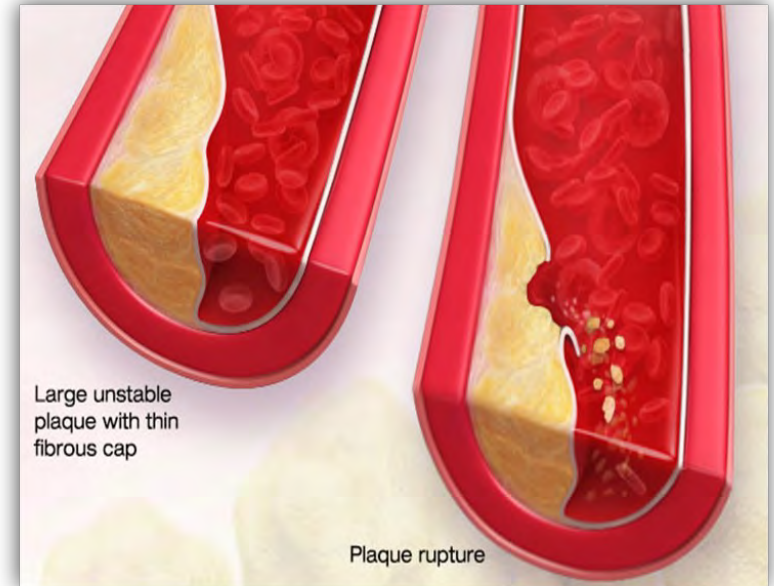



Cholesterol (Lipids)


Cholesterol is a waxy substance produced in the liver and released into the bloodstream. The body uses cholesterol to form cell membranes, aid in digestion, make Vitamin D in the skin cells, and develop hormones.


Cholesterol and specific proteins form several types of particles called lipoproteins. Higher than normal levels of low density lipoproteins (LDL) can lead to coronary artery disease. Whereas high density lipoproteins (HDL) remove cholesterol from the bloodstream and the artery walls.

Triglycerides are made of fat and glycerol. Triglycerides are stored in fat all over the body and can be an energy source. High triglycerides may cause coronary artery disease.



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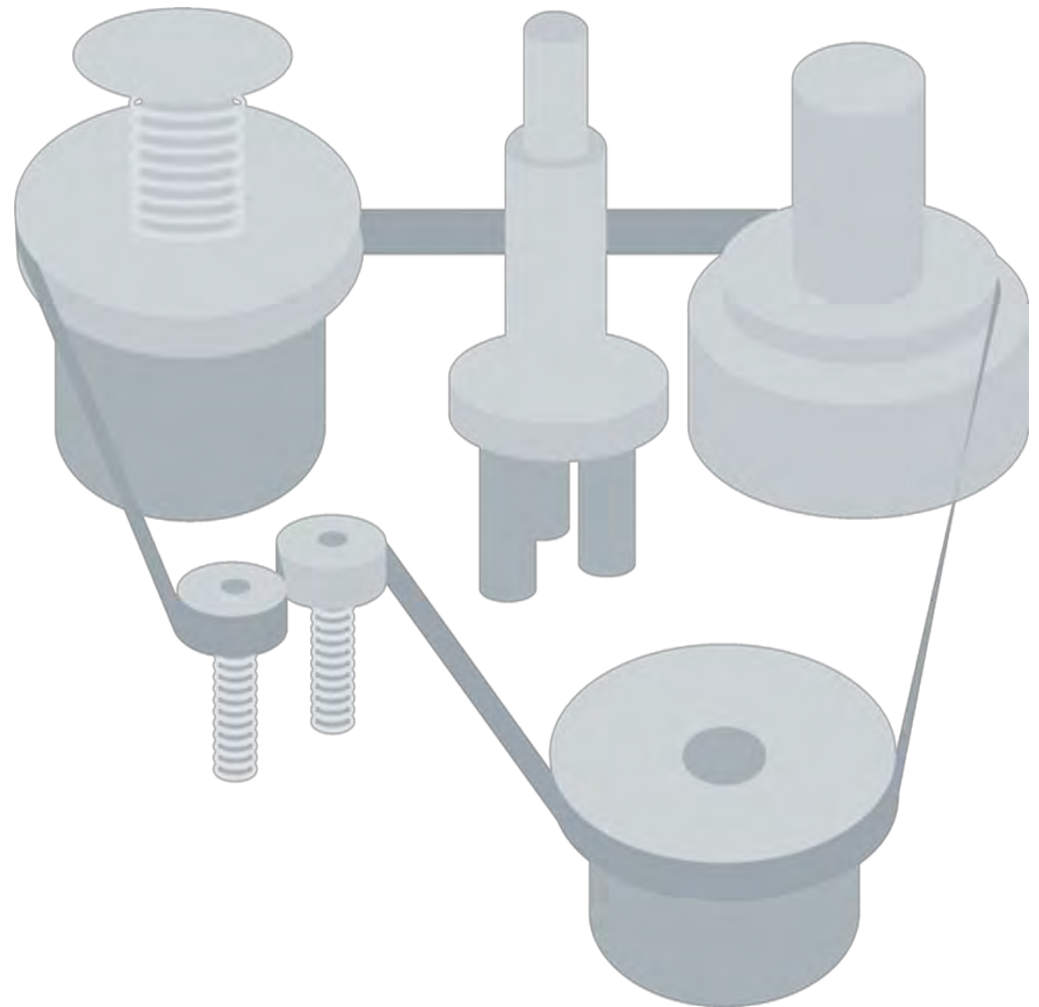
High Density Lipoproteins or "Healthy"
 Improve with being active and eating monounsaturated fats
- 

Low Density Lipoproteins or "Lousy"
 Improve with eating less saturated fat and more fiber
- 

Triglycerides
 Improve when blood glucose is maintained within targets and alcohol is decreased

Self-Management Strategies

- Because you have diabetes, you are at risk for heart disease. Eating a healthy diet high in monosaturated fats and fiber and low in saturated fat and sodium is suggested. We will cover this topic in more detail in **Module 5 – Healthy Eating**.
- Being active is also important to lower your risk for heart disease. We will review this topic in **Module 6 – Be Active**.
- Most often a “statin” or a cholesterol lowering medication is prescribed. We will discuss this in more detail in **Module 4 – Taking Medications**.
- If you have already had a heart attack, a lower LDL is recommended (<70 mg/dL). However, you and your provider or healthcare team should discuss your target range.



Kidneys

The kidneys are one of the most versatile organs in the body. Their primary role is to continuously remove waste products (urea) from the blood. After the kidneys have filtered the blood and removed waste products, the next step is to get rid of the waste or form urine. The kidneys are responsible for regulating the body's water volume, salt content, and blood pressure. The kidney's also produce hormones, regulate pH balance, and process vitamin D.

There are two important tests to determine how healthy the kidneys are.

These tests should be done yearly:

- **Microalbumin:** This is a urine test that checks for protein.
- **eGFR:** This is a blood test that measures kidney function.

If microalbumin is found in the urine, the kidneys are filtering protein. This is considered abnormal.

If an eGFR is <60 mg/dL it is abnormal. This indicates that kidney function is declining.

Medications may be prescribed. This will be discussed in more detail in **Module 4 – Taking Medications.**



Other Medical Care Guidance

- Dental Exams: 1-2 times per year
- Eye Exams: Every 1-2 years
- Blood Pressure: At every clinic visit
- Vaccines: Up to date
- Foot Exam: Self-check daily. Have a comprehensive foot exam yearly.

Notes:

Check List:

- I've had a dental exam within the last year.
- I've had an eye exam within the last year.
- I've had my blood pressure checked at my last clinic appointment.
- I received my flu vaccine this year.
- I check my feet daily.

Notes:





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The American Diabetes Association Recognizes this education service as meeting the National Standards for Diabetes Self-Management Education and Support

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